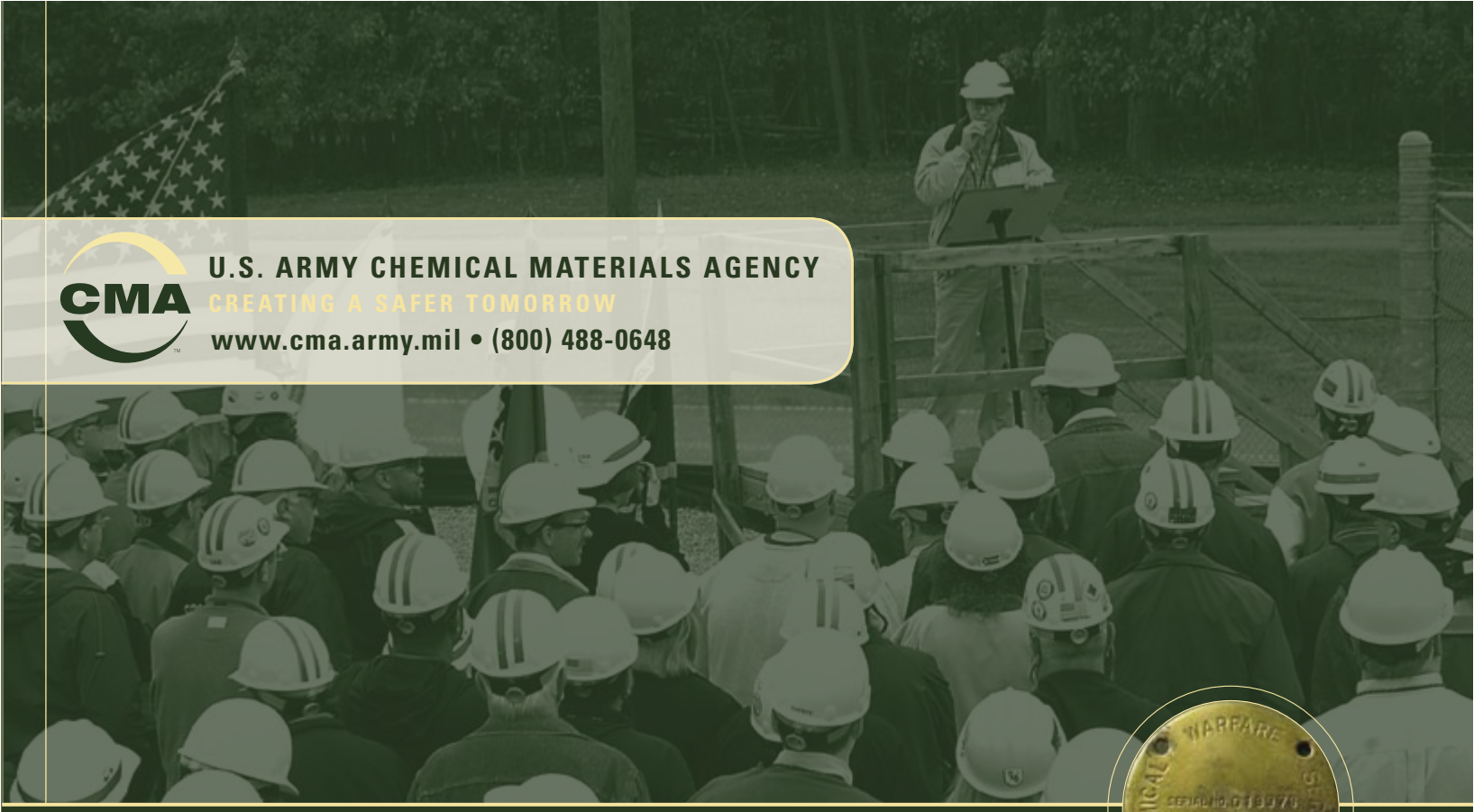

U.S. ARMY CHEMICAL MATERIALS AGENCY
CREATING A SAFER TOMORROW
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A Safer *Maryland* Today

Edgewood Chemical Activity (ECA) & Aberdeen Chemical Agent Disposal Facility (ABCDF)

2005 Commemorative Newsletter

"It took everyone working together to reach this milestone. But those of you on the ground at ABCDF and at ECA carried the majority of the burden. And you carried it well. No ceremonies, awards, accolades or recognition can adequately express the good you have done or the thanks you deserve."

—Michael A. Parker, Director
U.S. Army Chemical
Materials Agency

Aberdeen Drains and Neutralizes Agent from All Ton Containers

A Safer *Maryland* Today

On behalf of the U.S. Army Chemical Materials Agency (CMA), I extend to you my personal thanks and sincere congratulations for your part in the successful delivery, draining and neutralization of Aberdeen Proving Ground's last mustard agent ton container on March 8, 2005.

You and your fellow workers at the Edgewood Chemical Activity (ECA), the Aberdeen Chemical Agent Disposal Facility (ABCDF), Bechtel Aberdeen Team, and throughout CMA have contributed directly to this significant milestone in the history of chemical weapons disposal. You were responsible for safely storing and disposing of more than 1,800 containers of mustard agent. You have fulfilled the national and global imperative to safely dispose of the Edgewood stockpile. Because of your dedication, Maryland is the first state in the continental United States to complete its primary mission and remove the risk posed by the stockpile to the surrounding communities.

Thank you for a job well done. Thank you for your personal dedication to a task often considered thankless. Through all the challenges you faced, you remained focused on safely completing your mission and your commitment to excellence. You, as an individual and as part of the overall CMA team, stayed the course, even when that track changed after the tragedy of Sept. 11, 2001. I know that many of you have made personal sacrifices to successfully and safely accomplish your mission. I offer my appreciation for your sacrifices; you deserve the respect and gratitude of the citizens of our nation and the world.

In a time when so much of the news is negative, your achievements are a positive reaffirmation of the good that is achieved in this world, but is too often overlooked. You are a "good news" story. You have made chemical weapons history, literally and figuratively. This milestone will take its place in the archives of U.S. and world history as a sparkling achievement in making the world a safer place.

For more than 60 years, the mustard agent stockpile sat quietly as a deterrent to other countries that might have otherwise considered using their stockpile of chemical weapons against us. You safely guarded and monitored that stockpile and once the decision to dispose of the ton containers was made, and the appropriate technology selected for Edgewood, you and your fellow workers met challenge after challenge with professional determination and resolve.

From the very onset, you and all CMA personnel made safety and environmental protection the cornerstone of the effort to dispose of the Edgewood stockpile. Everyone on the project from the administrative assistants, to engineers and research scientists, to guards, to munitions handlers and emergency responders, all contributed to this milestone by keeping safety and environmental protection the top priority while safeguarding, transporting and destroying the stockpile.

While this has been a superb team and individual effort across the entire program, and what you have achieved will benefit the program as each site moves forward in meeting the national and global imperatives, you and CMA were not alone. Dozens of Army organizations such as the 22d Chemical Battalion (Technical Escort) and the Edgewood Chemical Biological Center, other government agencies, including state and federal regulators and international treaty inspectors, along with industry leaders and the Maryland Citizens' Advisory Commission, worked together to operate and oversee ECA and ABCDF in order to safely store and dispose of Edgewood's mustard agent stockpile.

The success of the Army's chemical disposal efforts is a direct result of these partnerships, as well as the important relationships between the Army and the community members who live on and near Aberdeen Proving Ground.

It took everyone working together to reach this milestone. But those of you on the ground at ABCDF and at ECA carried the majority of the burden. And you carried it well. No ceremonies, awards, accolades or recognition can adequately express the good you have done or the thanks you deserve.

You have used the experiences and successes of the Johnston Atoll Chemical Agent Disposal System, the Chemical Agent Munitions Disposal System, the Tooele Chemical Agent Disposal Facility and numerous other projects and individual efforts and research that are part of chemical weapons disposal history. This, combined with your personal and team professionalism and expertise, has resulted in this milestone achievement. In turn, your experiences and the lessons you've learned and shared will help the remaining sites safely and successfully store and destroy their stockpiles.

Take time to savor this moment. Then let us all move forward with the same dedication to safety and the environment to complete the remaining missions at ECA. I am proud to be a part of the CMA team, and I, again, congratulate you for your efforts. Well done!

Sincerely,

Michael A. Parker, Director
U.S. Army Chemical Materials Agency

Edgewood Chemical Activity and Aberdeen Chemical Agent Disposal Facility

"Working Together for a Safe Community and a Sound Environment"

From the very beginning, the Army knew that safety and environmental protection had to be the cornerstone of the Edgewood Chemical Activity (ECA) and Aberdeen Chemical Agent Disposal Facility (ABCDF) mission.

Literally dozens of Army organizations, other government agencies and industry leaders have worked together to maintain the Edgewood stockpile of mustard agent and build, operate and oversee ABCDF in order to safely drain and neutralize the mustard agent from each ton container within the stockpile. The success of the Army's chemical disposal efforts rely on these partnerships, as well as other important relationships between the Army and community members, as the second phase of the disposal process begins: cleaning, decontaminating and recycling ton containers.

"We have had an impressive team of individuals supporting the mustard agent storage and neutralization process," said Lt. Col. Gerald L. Gladney, commander of ECA/ABCDF. "Every team member has received extensive training and is ready to complete the second phase of this mission in the same safe and highly competent manner. It is abundantly clear to everyone involved in this process that each individual has had, and will continue to maintain, a personal responsibility for considering safety first and safeguarding the workers, our community and the environment."

Contents

ABCDF Processes Final Batch of Mustard Agent Drained from Last Aberdeen Container

Making a Safer Maryland Today

On March 11, 2005, workers at Aberdeen Chemical Agent Disposal Facility (ABCDF), located at the Edgewood Area of Aberdeen Proving Ground (APG), achieved a major milestone when the last batch of mustard agent was neutralized at the facility. This marks the end of draining and neutralizing APG's chemical agent stockpile, making a safer Maryland today.

APG is the first site in the continental United States to safely destroy its stockpile and to have the risk posed by a chemical agent stockpile eliminated.

"This is a great day for the people of Maryland and for the global chemical weapons disarmament effort," said U.S. Army Chemical Materials Agency (CMA) Director Michael A. Parker. He added, "A stockpile of steel containers holding one of the world's most lethal substances since 1941 has now been safely destroyed. The safety threat to the local community is gone and the worldwide threat of chemical weapons further reduced."

> ***"This is a great day for the people of Maryland and for the global chemical weapons disarmament effort. A stockpile of steel containers holding one of the world's most lethal substance since 1941 has now been safely destroyed. The safety threat to the local community is gone and the worldwide threat of chemical weapons further reduced."***
>
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> U.S. Army Chemical
> Materials Agency

"We had to overcome a series of technical challenges starting up a first-of-a-kind plant, but a combined work force of 500 government and Bechtel team contractor personnel rose to the occasion and resolved each and every issue," explains Edgewood Chemical Activity (ECA) and ABCDF Commander Lt. Col. Gerald L. Gladney. "Through it all, though, the workers did their jobs safely and brought us to this moment with a real sprint at the finish."

Workers at the facility began destroying the stockpile in April 2003. It took 18 months to drain and destroy the first half of the liquid agent; the second half took slightly more than four months.

The ABCDF work force had many partners in this effort, according to Army Site Project Manager Joseph Lovrich. "I look back with tremendous pride considering the many people that have worked tirelessly to convert a technology developed in an Army laboratory to a multi-acre industrial complex designed to safely destroy one of the nation's stockpiles of chemical weapons. Our success in reaching this milestone is a direct result of our partnerships with countless APG installation organizations, environmental regulators, emergency response agencies and the citizens of Maryland who endured the presence of the stockpile for more than 60 years."

"At our groundbreaking ceremony, six years ago this June," recalls Bechtel Defense and Space President Jan Van Prooyen, "the Bechtel Aberdeen team committed itself to providing the community, the Army and our nation with safe, disciplined, environmentally compliant chemical disposal. Now, thanks to the dedication of several hundred men and women – most of them Marylanders – who have been part of this multi-company team, I can acknowledge with pride that Bechtel Aberdeen has delivered on that commitment."

The steel containers that held the agent continue to be cleaned of residual agent solids, cut in half and decontaminated at the ABCDF's Ton Container Cleanout Facility. The last remnants of the stockpile, agent residue in the ton containers, referred to as the heel, are being removed using a high-pressure spray wash. These operations are scheduled for completion next winter. The entire facility will then enter a closure phase in which plant equipment is dismantled and decontaminated.

A Safer Maryland Today: Timeline

[1941]

Storage of bulk mustard agent begins at Edgewood Arsenal

[1988]

Chemical Stockpile Emergency Preparedness Program (CSEPP), headquartered in Edgewood, begins

In addition to this historical occasion, another significant milestone has been achieved. On Tuesday, March 8, 2005, inspectors from the Organisation for the Prohibition of Chemical Weapons (OPCW) completed a final inspection of ECA's Chemical Agent Storage Yard (CASY) and confirmed that all mustard agent-filled ton containers had been removed from storage. This completed ECA's obligations under the Chemical Weapons Convention treaty for CASY. No future inspections of the CASY by the OPCW are required.

Currently, chemical weapons disposal operations in Utah, Maryland, Alabama, Oregon, and on Johnston Island, where operations were completed in November 2000, have resulted in the safe destruction of more than 35 percent of the nation's declared chemical weapons stockpile involving 42 percent of originally declared munitions. Aberdeen Proving Ground is the first of eight U.S. Army stockpile sites in the continental United States to have emptied its stockpile storage area, eliminating the risk the stored agent posed to its surrounding communities during the past six decades. Disposal operations are set to begin in Arkansas and Indiana in the next couple of months.

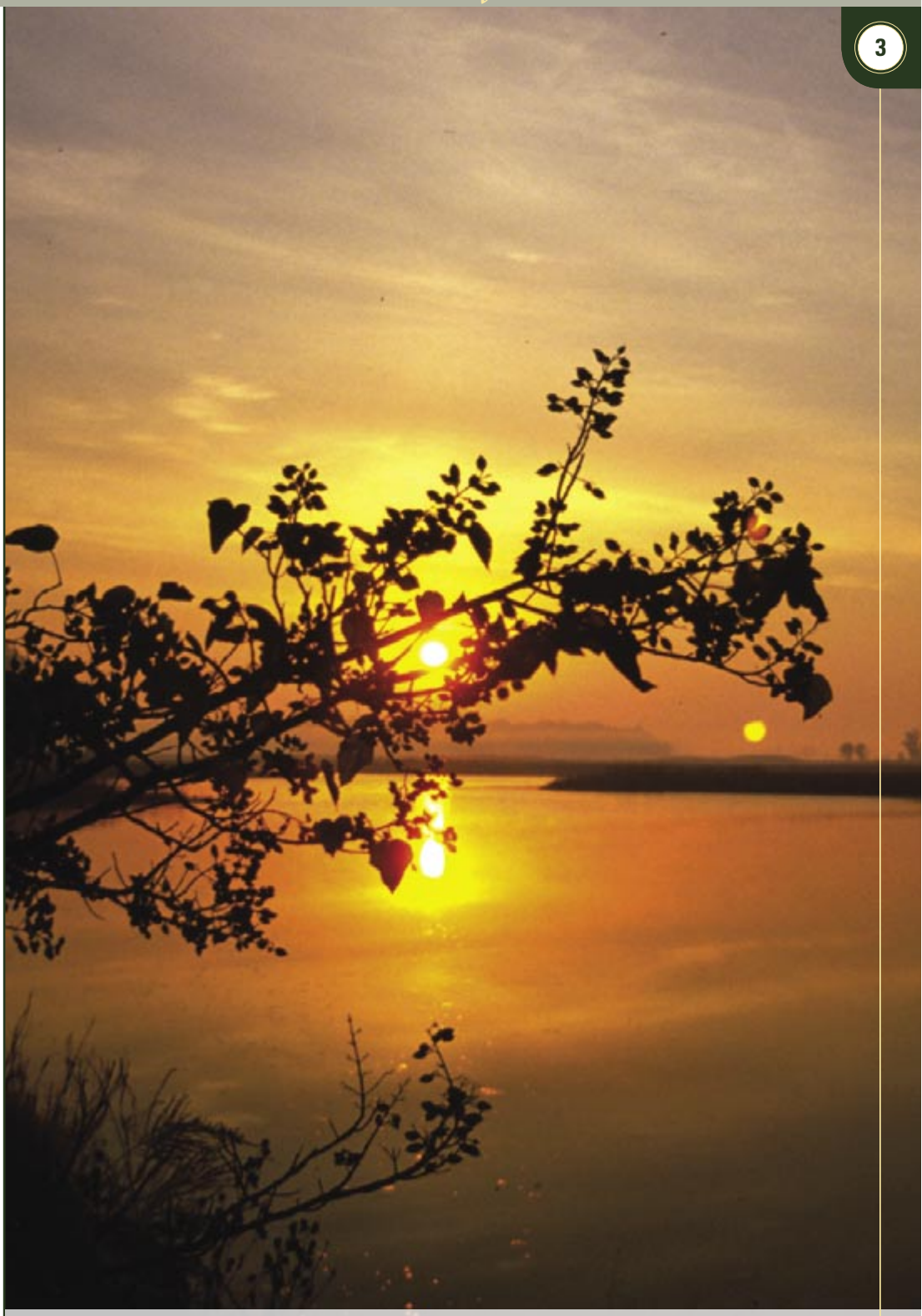


Photo Credit: International Imaging Center - U.S. Army Aberdeen Test Center

[1993]

December

Maryland Governor establishes Chemical Demilitarization Citizens' Advisory Commission in accordance with National Defense Authorization Act for Fiscal Year 1993 (Public Law 102-484, Subtitle G., sec. 172)

[1994]

Alternative Technologies and Approaches Project (ATAP) implements program to research, develop, test and evaluate technologies to destroy mustard agent stored at Aberdeen Proving Ground, Md.

[1995]

March 17

U.S. Army Chemical and Biological Defense Command responsible for safe storage of U.S. chemical weapons stockpile at nine sites; Edgewood Chemical Activity established.

Eliminating
The Outside Storage Risk

On Feb. 2, 2005, the Edgewood Chemical Activity (ECA), with support from the 22d Chemical Battalion (Technical Escort), moved the last container of mustard agent from Aberdeen's Chemical Agent Storage Yard (CASY) to the Aberdeen Chemical Agent Disposal Facility (ABCDF) for agent destruction.

This marked the end of 61 years of bulk mustard agent storage at Aberdeen Proving Ground (APG), and made APG the first of eight stockpile sites in the continental United States to empty its storage area, eliminating the risk posed to surrounding communities during the past six decades.

Teamwork was essential to reaching this important milestone. According to Edgewood Chemical Activity Civilian Executive Mary Jo Civis, "ECA and 22d Chemical Battalion worked hand-in-glove to make sure that the destruction of the stockpile was never delayed by the availability of ton containers. Members of both teams came in weekdays and weekends, worked in all weather, to keep pace with ABCDF as containers were drained and agent destroyed."

"I am proud of the contributions that both civilians and soldiers of the 22d Chemical Battalion have made in reaching this important accomplishment," says Battalion Commander Lt. Col. Franz J. Amann. "These men and women played a critical role in the movement of ton containers to the disposal facility, and in providing continuous storage and monitoring support to CASY. Throughout the operation, all personnel remained committed to the safety of our community and environment."

The first ton container was moved from CASY to ABCDF in April 2003. Since then, ECA managed the safe movement of 1,817 ton containers containing 1,623 tons of mustard agent.

ABCDF used a new technology to neutralize mustard agent by blending it with hot water and then sodium hydroxide. Emptied containers are being processed through a second ABCDF pilot plant, the Ton Container Cleanout facility. Each container is triple rinsed using high-pressure water spray and then cut in half, decontaminated and monitored to ensure no detectable agent before recycling.

Edgewood Chemical Activity and 22d Chemical Battalion (Technical Escort) workers and officials look on as the last ton container is transported from the Chemical Agent Storage Yard to the Aberdeen Chemical Agent Disposal Facility's Process Neutralization Bay.
Photo Credit: U.S. Army

More Work to be Done

Cleaning of drained containers that once held the agent continues. They are cut in half and decontaminated at the Aberdeen Chemical Agent Disposal Facility's (ABCDF) Ton Container Cleanout (TCC) facility. The last remnants of the stockpile, agent residue in the ton containers, referred to as the heel, are removed using a high-pressure spray wash. The TCC facility uses high-temperature water sprayed at high pressure to remove residual solids from drained containers. The automated system then cuts the containers in half for additional cleaning and eventual recycling as a non-hazardous waste.

Operations at the TCC facility began Jan. 7, 2005. Startup of the TCC facility marked the second phase of a plan to safely and quickly destroy the mustard agent stockpile located at the Edgewood Area of the Aberdeen Proving Ground, first by draining and neutralizing the agent stored in steel containers, then thoroughly cleaning the containers.

Describing the facility, ABCDF Site Project Manager Joseph Lovrich said, "The facility is truly state-of-the-art, but as with any first-of-a-kind initiative, we expect to face operational challenges along the way." Lovrich adds, "The lessons we learn will be shared with other chemical weapons disposal sites across the nation."

The TCC is a sealed facility consisting of 11 stations through which containers move on conveyors. One station punches holes in the containers, another sprays the interior of the containers with hot water to dislodge hardened material. The rinse water is then pumped from the container and is neutralized. At another station, a robotic arm removes each container's valves and plugs. A remote-operated cutting machine cuts the container in half at yet another station. The two halves are pressure washed with hot water inside and out. Finally, container halves are steamed and dried to complete the decontamination process.

A Safer Maryland Today: Timeline

[1996]

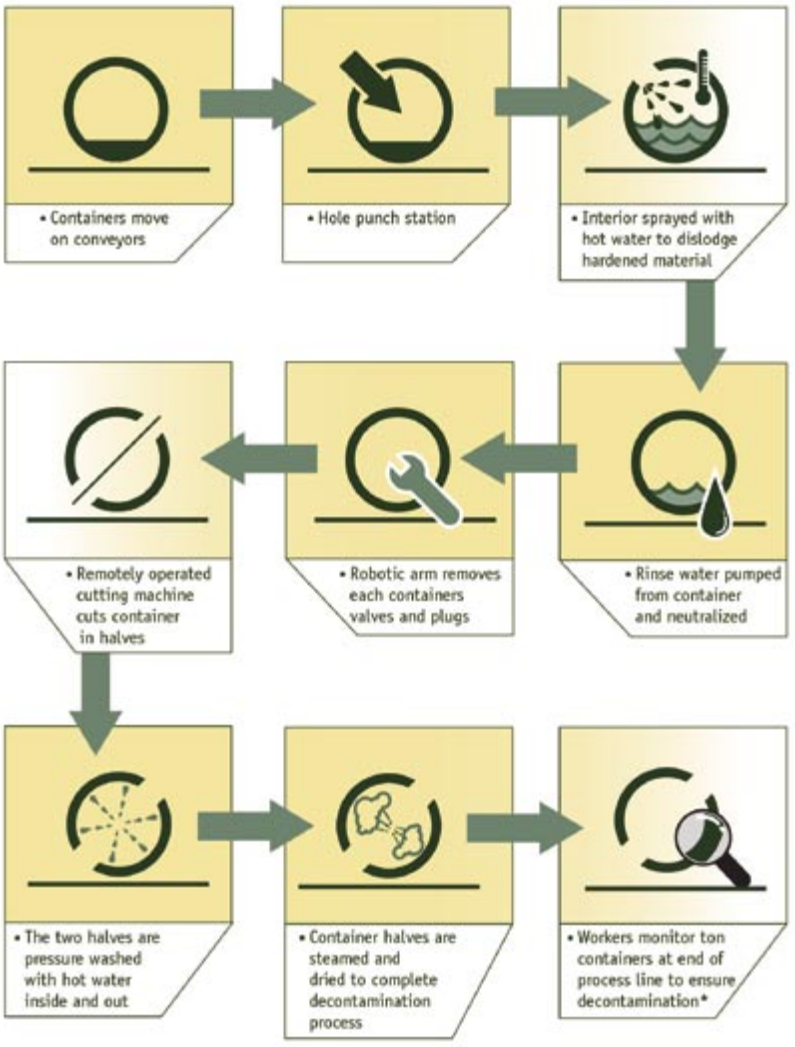
ATAP selects neutralization technology to destroy Maryland's stockpile

[1997]

ATAP receives authorization to proceed with full-scale neutralization pilot testing

Ton Container Cleanout (TCC) Facility

The TCC is a sealed facility consisting of stations through which containers move on conveyors.



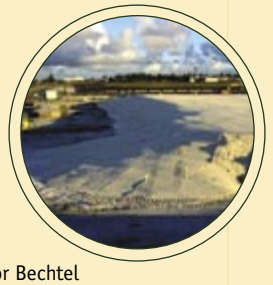
**Any container not fully decontaminated goes through the cleaning and decontamination station again.*

Workers monitor every ton container at the end of the process line to ensure that each container has been thoroughly cleaned and decontaminated. Any containers not fully decontaminated go through the cleaning and decontamination station again for further processing.

The facility uses a large air handling system that filters any potentially contaminated air through a bank of carbon filters throughout the entire process. Initially, the facility will operate under limited conditions and slowly increase the destruction rate much like its predecessor, the neutralization facility. These operations are scheduled to be completed by December 2005.

Closure

Although operations at the Aberdeen Chemical Agent Disposal Facility (ABCDF) Ton Container Cleanout (TCC) facility will take little more than a year to complete, workers at ABCDF are already planning for closure.



Closure requires all mustard agent neutralization equipment to be decontaminated, monitored to ensure it is agent-free and then removed from the facility. ABCDF systems contractor Bechtel Aberdeen is responsible for cleaning the facility and the surrounding area so that it will be safe for any future activities at Aberdeen Proving Ground (APG).

"Safety is our first priority as we move forward with our closure plans," says Edgewood Chemical Activity (ECA) and ABCDF Commander Lt. Col. Gerald L. Gladney.

The U.S. Environmental Protection Agency Region III, the National Academy of Sciences' National Research Council, the U.S. Army Center for Health Promotion and Preventive Medicine and the Maryland Department of the Environment will oversee closure efforts to ensure the highest levels of protection to the environment, the APG work force and the public.

ABCDF and ECA personnel will use lessons learned from the Chemical Material Agency's (CMA) closure of the Johnston Atoll Chemical Agent Disposal System. Similarly, lessons learned during ABCDF closure will be shared with other CMA disposal sites.

APG's Garrison will make decisions on future land use based on the Garrison's training requirements and other tenant needs. The public will be kept informed of these decisions and have the opportunity to provide comments.

[1997]

April

Edgewood Chemical Stockpile Outreach Office opens

[1997]

April 29

Chemical Weapons Convention (CWC) enters into force

Aberdeen Chemical Agent

Accelerated Disposal

First of its Kind ~ First to be Done

After the Sept. 11, 2001, terrorist attacks, the U.S. Army began evaluating additional methods to reduce risk to the public associated with chemical stockpile storage.

In January 2002, the Army announced plans to accelerate the destruction of the mustard agent stockpile located at Aberdeen Proving Ground (APG) in Maryland, recognizing that complete destruction of the stockpile provides the best security and permanent protection to the public. The Army worked closely with officials and regulators from the Maryland Department of the Environment (MDE) and the U.S. Environmental Protection Agency (EPA) to determine the safest and most effective way to accelerate the destruction of the bulk mustard agent stockpile stored in steel ton containers. The resulting plan was approved by environmental regulators and endorsed by the Maryland Citizens' Advisory Commission, along with federal, state and local officials. Community input on the plan also was considered.

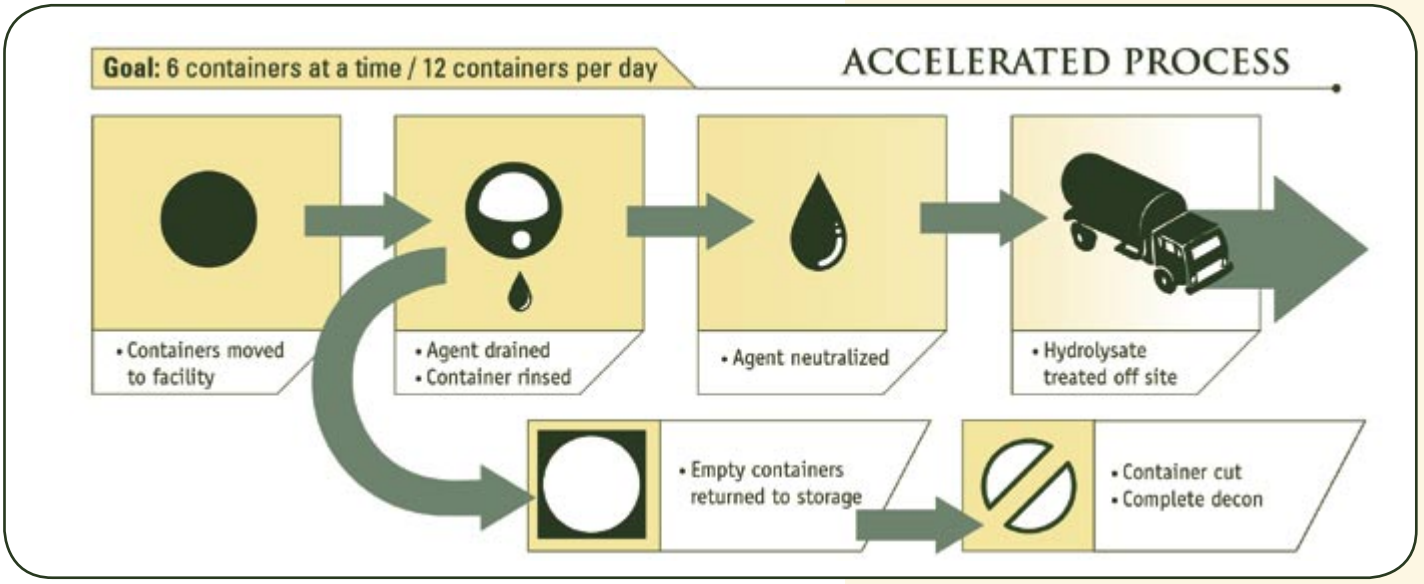
An Army acquisition decision memorandum signed by Under Secretary of Defense for Acquisition, Technology and Logistics E.C. "Pete" Aldridge on Feb. 1, 2002, officially signaled the start of the accelerated disposal project. A Phase I Consent Agreement governing construction of the accelerated facility was signed between MDE and APG. In addition, a Class 1 permit modification from EPA Region III and the Record of Environmental Consideration for construction were signed.

General Process Compar

"How'd they do it?"

Accelerating the destruction of the stockpile involved the same neutralization technology and much of the same equipment approved for use in the original Aberdeen Chemical Agent Disposal Facility (ABCDF). The accelerated plan simplified the original process and reordered its sequence to destroy the mustard agent first, thereby reducing the risk to Maryland citizens ahead of schedule. It differed from the original process in four main steps: container draining; agent destruction and confirmation; disposal of the neutralization by-product or "hydrolysate;" and container decontamination and disposal.

The Army has completed the first two steps of this process having successfully drained and neutralized the contents of all stockpiled ton containers. It has safely transported the neutralization by-product for off-site disposal and has begun container decontamination and disposal.



Disposal Facility

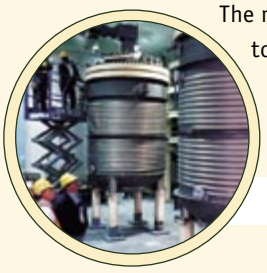
ison

Step 1 Container Draining

Workers drained the mustard agent from steel containers by manually removing the containers' plugs through a glove box system that has been used safely by the Army for agent handling for more than 10 years. A tube was inserted and the agent pumped to an agent holding tank.

CURRENT STATUS: *Workers at ABCDF safely drained all 1,817 ton containers stored for more than 60 years at the Edgewood Chemical Activity.*

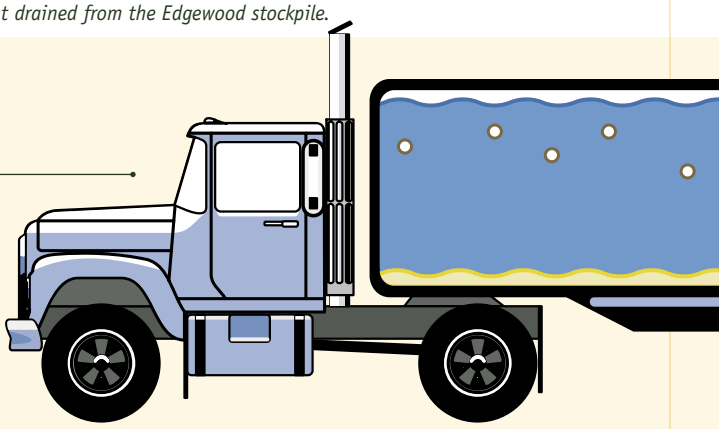
Step 2 Agent Destruction and Confirmation



The mustard agent was fed into a tank containing hot water where it was vigorously mixed, causing the mustard agent to react with the water to form a biodegradable liquid byproduct called hydrolysate. The hydrolysate is a relatively harmless liquid that is approximately 90 percent water with a mixture of salts, a chemical called thiodiglycol and possible minute traces of impurities such as copper and iron. Thiodiglycol, an organic chemical used in the paint and ink industry, is readily biodegradable. Each hydrolysate batch is tested to confirm complete agent destruction.

CURRENT STATUS: *The ABCDF work force successfully destroyed all agent drained from the Edgewood stockpile.*

Step 3 Hydrolysate Disposal



Although free of mustard agent, the hydrolysate still is considered an industrial hazardous waste and requires further processing. The post-treatment step—where the hydrolysate is added to a mixture of ordinary sewage treatment bacteria that "digests" the thiodiglycol to form carbon dioxide and wet solids—is being accomplished at DuPont's Secure Environmental Treatment at Chambers Works in Deepwater, N.J. By transporting the hydrolysate to a permitted off-site commercial facility that is well equipped to handle these kinds of wastes, the buildings and equipment designed for on-site hydrolysate biotreatment did not have to be built.

CURRENT STATUS: *DuPont has successfully treated the hydrolysate resulting from this neutralization process of the bulk agent and will continue to receive the hydrolysate from the ton container cleanout process and facility closure.*

Step 4 Container Decontamination and Disposal

Under the original disposal plan, steel containers would have been cut, rinsed and decontaminated right after draining the agent. The accelerated process called for draining and neutralizing the agent first, then decontaminating and recycling the empty containers later. This approach provided the most immediate protection to the public. Many authorities with extensive knowledge of the chemical demilitarization program, hazardous waste disposal, worker safety regulations and environmental protection continued to work closely with the Army to ensure that worker and public safety and environmental protection were the most important aspects of this project.

CURRENT STATUS: *Emptied containers are being processed through a second pilot plant at the ABCDF called the Ton Container Cleanout Facility. Each container is triple rinsed through the facility using high-pressure water spray. The rinse water is then pumped from the container and is neutralized. The resulting hydrolysate is shipped to DuPont for final treatment.*

Containers are then cut in half and decontaminated. The container parts will be monitored to ensure that no agent remains and will be shipped off-site for recycling.

Chemical Stockpile Emergency Preparedn

Partners In Success

Maryland communities near the Aberdeen Proving Ground (APG) are protected and better able to respond to emergencies, thanks to the Chemical Stockpile Emergency Preparedness Program (CSEPP), a joint effort between the Army, Department of Homeland Security and the Federal Emergency Management Agency (FEMA). Since the program began in 1988, CSEPP has facilitated the development of emergency response capabilities across the eight U.S. chemical stockpile sites and adjacent communities.

Many agencies and personnel make up the highly trained Aberdeen CSEPP team that is dedicated to protecting the community surrounding the former APG chemical agent stockpile. This team is comprised of organizations including FEMA; emergency management agencies in Kent, Harford and Baltimore counties; the Maryland Emergency Management Agency; the Maryland Institute for Emergency Medical Services; and the Department of the Army.

The program has provided millions of dollars to the state and the counties surrounding APG to enhance emergency response operations in the unlikely event of a chemical stockpile incident. Now that the threat posed by continued storage of the stockpile is gone, the legacy of the CSEPP program will continue to benefit the local community.

TRAINING

Thanks to CSEPP, emergency responders, hospital staffs and emergency managers have completed comprehensive emergency response courses including chemical awareness, medical treatment and decontamination training. Firefighters, police officers, medical teams, the American Red Cross and the Army have trained together annually to test emergency response procedures and sharpen response capabilities. Today, these same emergency responders are applying the acquired skills so that the public is more protected than ever.

PUBLIC EDUCATION

The Aberdeen CSEPP team has educated citizens on emergency notification procedures and proper response actions. It has presented information to schools and other community venues, and made this information readily available to the public. Emergency responders will continue to maintain these close ties with the public to ensure they are fully informed on how they can keep their families and homes safe in any emergency.

Emergency response personnel triage a mock casualty during an annual Chemical Stockpile Emergency Preparedness exercise.
Photo Credit: U.S. Army

A Safer Maryland Today: Timeline

[1998]

October 2
ATAP awards ABCDF systems contract to Bechtel National, Inc. of San Francisco, Calif.

[1999]

April
ATAP starts construction of Aberdeen Chemical Agent Disposal Facility

ess Program

FACILITIES

Emergency operations centers at APG and in Harford, Kent and Baltimore counties and the Maryland Emergency Management Agency's headquarters at Camp Fretterd, Md., stood ready to coordinate emergency response activities should there have been a chemical event at the Aberdeen Chemical Agent Disposal Facility or nearby Chemical Agent Storage Yard. A Joint Information Center located off Interstate 95 in Edgewood was equipped to provide residents with timely information during an emergency. Emergency responders continue to keep many of these facilities fully staffed in order to respond to other types of incidents in the future.

The Aberdeen CSEPP team established a dedicated network of communication systems that allowed for rapid notification in the event of an emergency. If a chemical event had occurred, citizens would have been notified by the activation of six emergency sirens located at the Edgewood Area of APG and nine sirens in the Edgewood community. Immediately after, a voice message would have instructed the public on protective actions to take. Notification of citizens also could have been made through announcements over the Emergency Alerting System (EAS) and through route-alerting efforts conducted by firefighters and police.

Now that the stockpile has been destroyed, Harford County Division of Emergency Operations will maintain the siren system, which augments its ability to notify the public of potential dangers, such as severe weather.

Some specialized equipment used during the program is no longer necessary now that the threat posed by continued storage of the stockpile is eliminated. Such is the case with protective air-filtration systems installed in four schools (Edgewood High School, Edgewood Middle School, Edgewood Elementary School and Deerfield Elementary School) located in the CSEPP Emergency Planning Zone. The CSEPP team will soon dismantle units that will not be reused, a physical and symbolic reminder of a potential risk to the community that now is gone.

Citizens' Advisory Commission

Former Maryland Governor William Donald Schaefer created the Maryland Citizens' Advisory Commission (MD CAC) in December 1993, in accordance with the National Defense Authorization Act for Fiscal Year 1993. The Commission was created to give citizens a voice on matters relating to chemical weapons storage, disposal and emergency preparedness.

MD CAC members have worked for many years with the Army and have been instrumental in all program milestones, from the technology selection at the Aberdeen Chemical Agent Disposal Facility to construction and operations. The Army recognizes the significant contributions each member of the commission made to the success of the Chemical Material Agency's mission at Aberdeen Proving Ground. Those members are: Mr. John E. Nunn III, Worton, Md., co-chairman; Mr. George Englesson, Aberdeen, Md., co-chairman; Mr. Alvin L. Bowles, Baltimore, Md.; Mr. Steven K. Broyles, Finksburg, Md.; Mrs. Katharine K. Hutchinson, Salisbury, Md.; Ms. Linda Koplovitz, Bel Air, Md.; Mr. David McMillion, Bethesda, Md.; Mr. B. Daniel Riley, Edgewood, Md.; Judge (Ret.) H. Thomas Sisk, Worton, Md.

One of many Citizen's Advisory Commission meetings held at the Edgewood Chemical Stockpile Outreach office. ***Photo Credit: U.S. Army***

[2002]

February 1

ATAP accelerates neutralization process at ABCDF in response to Sept. 11, 2001, terrorist attacks

[2002]

September 6

ABCDF celebrates completion of construction

Chemical Materials Agency

The U.S. Army Chemical Materials Agency (CMA) is responsible for the safe storage and elimination of the nation's aging chemical weapons. CMA is the world leader in programs to store, treat and dispose of chemical weapons safely and effectively. The agency develops and uses technologies to safely store and eliminate chemical weapons while protecting the public, its workers and the environment. CMA also provides support to National Defense and the American Soldier through its industrial base missions. CMA was created to incorporate the former Program Manager for Chemical Demilitarization and portions of the Soldier, Biological and Chemical Command into one agency. This streamlined operations and allows for greater integration of these programs.

Update on Chemical Weapons Stockpile Disposal Activities Nationwide

Prior to the successful disposal operations at the Aberdeen Chemical Agent Disposal Facility (ABCDF), the U.S. Army Chemical Materials Agency (CMA) completed operations in November 2000 at the world's first full-scale disposal facility, Johnston Atoll Chemical Agent Disposal System (JACADS), located on Johnston Island in the Pacific Ocean. Currently, chemical weapons are being destroyed in Tooele, Utah; Anniston, Ala.; and Umatilla, Ore. Agent disposal operations are anticipated to begin within the next couple of months in Pine Bluff, Ark., and Newport, Ind. Technologies for the destruction of the Blue Grass, Ky., and Pueblo, Colo. stockpiles have been selected and plans for destruction are continuing under the Assembled Chemical Weapons Alternatives (ACWA) Program.

In February 2005, CMA announced that it has safely destroyed more than 35 percent of the nation's stored chemical agent. CMA continues to work toward fulfilling its mission to enhance national security while meeting the destruction provisions of the Chemical Weapons Convention and, under the requirements of the treaty, is making substantial progress in destroying non-stockpile chemical warfare materiel, such as recovered chemical weapons, former chemical weapons production facilities, binary chemical weapons and chemical samples.

Photo Credit: U.S. Army

A Safer Maryland Today: Timeline

[2003]

April 23
ABCDF starts agent destruction operations

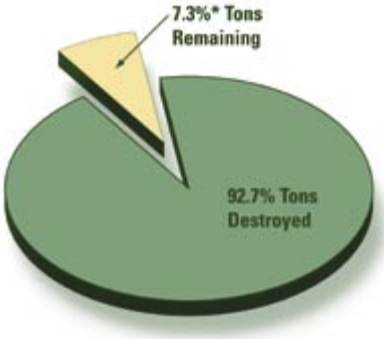
[2003]

October 9
Chemical Materials Agency forms, combines demilitarization and storage functions into one organization

Neutralization And Storage Data

As of March 11, 2005

ABCDF - Agent Neutralized



Edgewood Chemical Activity

Original Tonnage	1625 Tons
Remaining Tonnage	118 Tons
Destroyed to Date	1507** Tons
Percent of original tonnage destroyed	92.7%
Percent of original munitions drained	100%

** The remaining seven percent of the stockpile is in the form of agent residue inside drained ton containers. It is non-recoverable as agent and will be dislodged and neutralized through processing in ABCDF's Ton Container Cleanout Facility.*

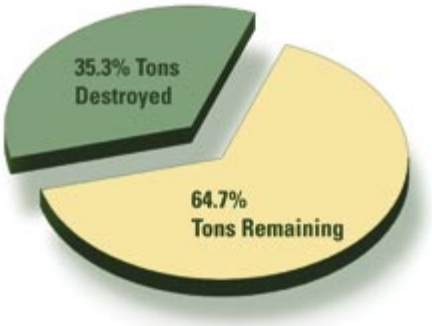
*** Number includes 1 ton container destroyed at CTF to support ACWA sampling.*

Nations Stored Chemical Agent

Total Stockpile	31,498 tons*
Total Destroyed	11,136 tons**
Total Remaining	20,362 tons

** Includes 13 tons of Lewisite and miscellaneous ton containers*

*** Includes 4 tons of chemical agent processed in miscellaneous ton containers*



Destroyed Remaining

Chemical Weapons Convention

The Chemical Weapons Convention (CWC) is an international agreement or treaty that prohibits the development, production, stockpiling, transfer and use of chemical weapons. It also calls for the destruction of all chemical weapons stockpiles. The U.S. is a signatory to the CWC, which the Senate ratified on April 25, 1997.

U.S. PARTICIPATION IN THE CWC

The United States became a States Party when the U.S. Senate ratified the Convention on April 25, 1997. The U.S. Army, through its Chemical Materials Agency, and the Department of Defense Assembled Chemical Weapons Alternatives program are responsible for the disposal program within the United States. CMA works with many federal and state agencies to meet Convention deadlines.

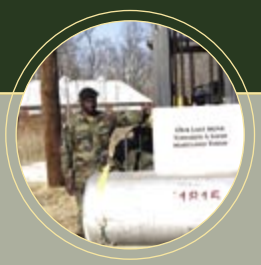
CMA is currently the international leader in chemical weapons destruction. As of January 2005, it had destroyed more than 35 percent of the nation's chemical weapons stockpile while ensuring the safety and protection of workers, communities and environment.

The Edgewood Chemical Activity/Aberdeen Chemical Agent Disposal Facility (ABCDF) workers have done their part in helping the United States fulfill its commitment to destroy our nation's stockpile by draining and neutralizing APG's mustard agent stockpile at the ABCDF. We live in *A Safer Maryland Today.*

[2004]

October

ABCDF achieves 50 percent destruction milestone



[2005]

February/March

ABCDF drains last container of mustard agent and neutralizes drained agent, eliminating stockpile storage risk ahead of original schedule. 1,817 containers were drained and more than 3,200,000 pounds of mustard agent were destroyed. ***A Safer Maryland Today* has been achieved!**

[2006-2007]

ABCDF facility closure

Bechtel workers (who designed, constructed and operated the Aberdeen Chemical Agent Disposal Facility) are pictured in the early phase of construction.
Photo Credit: U.S. Army

Bechtel Aberdeen

http://www.bechtel.com

The U.S. Army's systems contractor for the Aberdeen Chemical Agent Disposal Facility, Bechtel National, heads a team of eight companies known collectively as Bechtel Aberdeen.

RESPONSIBILITIES	TASK STATUS
Design Completion	Complete
Facility Construction	Complete
Facility Systemization and Testing	Complete
Facility Operation/Mustard Agent Disposal	Complete
Equipment Purchase and Installation	Complete
Personnel Training	Ongoing
Facility Closure	Initiated and ongoing

In addition to Bechtel Aberdeen's diverse knowledge, other team members have applied their expertise to specific roles in the disposal process:

- **BATTELLE MEMORIAL INSTITUTE** provides laboratory and chemical surety (security) support as well as environmental, engineering, pilot testing and systemization assistance. ***http://www.battelle.org/***
- **EARTH TECH** provided design, testing and operation of the facility's proposed bio-treatment process and its associated engineering studies. ***http://www.earthtech.com/***
- **GENERAL PHYSICS** was responsible for assisting in the design of the facility; planning and overseeing the execution of plant start-up activities; developing and implementing site specific training programs; designing and implementing an emergency preparedness program for the workforce; and providing technical support for demilitarization operations and facility maintenance. ***http://www.gpworldwide.com/***
- **HORNE ENGINEERING** provides expertise to the Bechtel Aberdeen team in several important areas including health and safety, environmental compliance and public outreach management. ***http://www.horne.com***
- **INNOVATIVE EMERGENCY MANAGEMENT** provided emergency management and emergency response support. ***http://www.ieminc.com/***
- **EA ENGINEERING** supported the development of environmental permits. ***http://www.eaest.com/***
- **UXB INTERNATIONAL** provided support clearing any unexploded ordnance that may have been found during construction of the ABCDF. ***http://www.uxb.com/***
- **UPPER CHESAPEAKE MEDICAL SERVICES** provides general medical support for facility personnel. ***http://www.uchs.org/home.cfm***

Edgewood Chemical Activity

When the Woodrow Wilson administration searched for a place to focus the Army's chemical warfare production and research more than 80 years ago, it selected a remote section of Maryland near the Pennsylvania Railroad and the shipping lanes of the Chesapeake Bay. Edgewood Chemical Activity traces its roots to this decision that resulted in the creation of Edgewood Arsenal.

Edgewood Chemical Activity was established March 17, 1995, following the Army's reorganization of its chemical storage mission. Its higher headquarters, the U.S. Army Chemical and Biological Defense Command, now the U.S. Army Research, Development and Engineering Command, assumed responsibility for the safe storage of the Army's chemical stockpile located at Edgewood and seven other sites until 2003, when the U.S. Army Chemical Materials Agency (CMA) was established to protect and safely store the nation's aging chemical weapons, while working toward the effective recovery, treatment and ultimate elimination of the nation's chemical warfare materiel.

Edgewood Chemical Activity's missions included the safe storage and surveillance of the chemical stockpile, as well as emergency preparedness planning and chemical treaty compliance of Edgewood's chemical storage facilities.

The activity's missions stemmed from the production of mustard agent at Edgewood during World War I and World War II. The last major production run of mustard agent occurred over a half century ago in 1950. Since then, the safe and secure storage of mustard agent in steel containers has served as a deterrent to chemical warfare, with responsibility for that safe storage passed from commander to commander.

There were no explosively configured weapons in the Edgewood stockpile—only bulk agent. Thick steel containers designed to safely hold the agent were inspected on a regular basis. The stockpile was continuously monitored and numerous security measures were in place to ensure maximum protection while it was in storage, and later when it was transported safely to the nearby Aberdeen Chemical Agent Disposal Facility for destruction.

Edgewood Chemical Activity workers safely secure ton containers located in the Chemical Agent Storage Yard.
Photo Credit: U.S. Army

Alternative Technologies and Approaches Project

The Army established the Alternative Technologies and Approaches Project (ATAP) in 1994. ATAP is a mission area in the U.S. Army's Chemical Materials Agency, headquartered at the Edgewood Area of Aberdeen Proving Ground (APG), Md.

Originally, ATAP was tasked to investigate alternatives to incineration for the disposal of the chemical agent stockpiles at APG, and Newport Chemical Depot, in Indiana.

After extensive research for technologies that could possibly be used to destroy the agent, ATAP selected three viable alternative technologies and neutralization-based technologies for further examination. Three independent groups reviewed each technology to determine which could destroy the bulk agent stockpile while meeting all of the legal and regulatory requirements for safety, environmental protection and cost effectiveness. All three review groups, as well as the Maryland Citizens' Advisory Commission, recommended neutralization as the process for the disposal of Maryland's stockpile.

Once ATAP fulfilled its original mission and selected neutralization as the disposal method, ATAP's mission shifted focus to pilot testing neutralization at the Indiana and Maryland sites.

After the Sept. 11, 2001, terrorist attacks, ATAP worked with multiple state and federal agencies to develop methods for expediting safe destruction of the Maryland stockpile using neutralization.

APG was chosen as a neutralization site because it stored agent in large steel containers without explosives or other weapon components. In addition, its stockpile had only one type of chemical agent. This simple configuration was ideal for piloting alternative disposal methods.

In addition to its mission to pilot test neutralization, ATAP also monitors business, science and technology for advancements that could be useful to safely destroy the nation's remaining stockpile of chemical agent.

Working Together for A Safe Community

The Army succeeded in its disposal mission by working closely with local, state, national and international agencies and groups. Their contributions make *A Safer Maryland Today.*

- **U.S. CONGRESS** oversees chemical weapons storage, disposal and emergency preparedness.
  www.gao.gov
  www.house.gov
  www.senate.gov

- **THE NATIONAL ACADEMY OF SCIENCES**, appointed by Congress, provides independent scientific and technical advice and program oversight through the National Research Council, and investigates program safety and performance. ***www.nationalacademies.org***

- **THE ABERDEEN CHEMICAL STOCKPILE EMERGENCY PREPAREDNESS PROGRAM (CSEPP)** is comprised of a unique partnership between the Federal Emergency Management Agency (FEMA) and the U.S. Army. Since 1988, FEMA and the U.S. Army have assisted communities surrounding the eight chemical stockpile sites to enhance their abilities to respond in the unlikely event of a chemical agent emergency. The success of Aberdeen CSEPP initiatives can be attributed to the productive working partnerships enjoyed by federal, state, and local jurisdictions involved in the program. State and local partners include the Maryland Emergency Management Agency, the Maryland Institute for Emergency Medical Services, and emergency management agencies in Harford, Kent and Baltimore counties.
  www.fema.gov
  http://memaportal.mema.state.md.us
  http://miemss.umaryland.edu/
  www.co.ha.md.us/EOC/EmerPlan/csepp.htm
  http://www.kentcounty.com/ema/ep.html

- **THE U.S. ENVIRONMENTAL PROTECTION AGENCY**, together with the Maryland Department of the Environment, provides oversight on environmental aspects of the chemical agent disposal program.
  www.epa.gov

- **THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION** provides safety and oversight for disposal plant employees and enforces worker safety and health regulations. ***www.osha.gov***

- **THE U.S. CENTERS FOR DISEASE CONTROL AND PREVENTION** receives and reviews all chemical agent monitoring data, reviews all proposed weapons disposal operations, and certifies public and workers health and welfare. ***www.cdc.gov***

- **THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE)** is the primary environmental regulatory authority with jurisdiction over the construction, operation, and closure of the Aberdeen Chemical Agent Disposal Facility (ABCDF).
  www.mde.state.md.us

- **THE U.S. ARMY CORPS OF ENGINEERS**, Huntsville Center's Chemical Demilitarization directorate is the Corps of Engineers' life cycle project manager for facility design and construction, equipment design, acquisition, and installation in a multi-billion dollar program, building complex facilities that use a variety of technologies to safely destroy the nation's stockpile of aging chemical weapons.
  http://www.hnd.usace.army.mil/major.aspx

- **THE U.S. ARMY FIELD SUPPORT COMMAND** manages agreements for all contracted support required to build, operate and decommission ABCDF. Located in Rock Island, Illinois, they are important in conducting project administration.
  http://www.afsc.army.mil

- **THE U.S. ARMY EDGEWOOD CHEMICAL BIOLOGICAL CENTER (ECBC)** played a significant role in developing the neutralization technology used to destroy drained agent from the Aberdeen stockpile. Many ECBC representatives were a part of ABCDF's work force and directly assisted with on-site agent destruction. ECBC is a world leader in applying state-of-the-art science, technology and engineering to chemical/biological defense problems.
  www.ecbc.army.mil

- **THE U.S. ARMY CENTER FOR HEALTH PROMOTION AND PREVENTIVE MEDICINE (USACHPPM)** directs various programs created to safeguard the health of soldiers, civilians and their families at Army and Department of Defense locations throughout the world, including APG.
  http://chppm-www.apgea.army.mil/

- **THE ORGANISATION FOR THE PROHIBITION OF CHEMICAL WEAPONS (OPCW)** The mission of the OPCW is to implement the provisions of the Chemical Weapons Convention in order to achieve a vision of a world free of chemical weapons. The ultimate aim is to contribute to international security and stability, to general and complete disarmament and to global and economic development.
  www.opcw.org

- **THE U.S. ARMY 22d CHEMICAL BATTALION/ TECHNICAL ESCORT UNIT (TEU)**, an Army organization with 60 years of experience in the movement of hazardous chemicals, has safely and successfully moved all of the large steel containers of liquid mustard agent to the neutralization facility from the Chemical Agent Storage Yard under supervision from the Edgewood Chemical Activity. Specialized training, state-of-the-art detection and monitoring equipment and mobile laboratories have contributed to the effectiveness of their mission.

and A Sound Environment

- **THE U.S. ARMY GARRISON, ABERDEEN PROVING GROUND (APG)** supports organizational missions by providing environmental, fire prevention and safety programs for soldiers, employees and residents of APG. Garrison's responsibilities include: regulatory compliance, natural and cultural resource conservation, environmental restoration and sustainment, fire and emergency medical services, emergency management, safety, occupational health and surety. ***http://www.apg.army.mil***

- **SHAW E&I** assisted with research and development efforts, focusing on preliminary engineering of neutralization technology and material handling. They developed the original acquisition design package for ABCDF and continue to provide engineering expertise on project operations. ***http://www.shawgrp.com/***

- **SAIC** provided integration support to ABCDF in many areas of project management: project controls, budgeting and funding support, environmental protection, permit compliance and impact analysis, treaty compliance, risk management, systemization, controlled startup, operations and closure support, LAN network administration and contract administration support. ***http://www.saic.org***

Photo Credit: International Imaging Center - U.S. Army Aberdeen Test Center

history

ABERDEEN

Aberdeen Proving Ground ~ Yesterday and Today

Aberdeen Proving Ground, the Army's oldest active proving ground, was established on Oct. 20, 1917, six months after the United States entered World War I, to provide the military a facility where design and testing of ordnance materiel could be carried out in close proximity to the nation's industrial and shipping centers. The installation comprises two principal areas separated by the Bush River. The northern area is known as the Aberdeen Area, and the southern sector, the Edgewood Area, once Edgewood Arsenal. The two areas were administratively combined in 1971.

Edgewood was established in November 1917 as a chemical weapons research, development and testing facility. It provided chemical production and artillery shell filling facilities to respond to the chemical weapons that were being used against U.S. troops in Europe.

The main chemicals produced were phosgene, chloropicrin and mustard. After the war, activity at the facility decreased. During the 1930s, the Edgewood Arsenal served as the center of Chemical Warfare Service activities. Workers developed gas masks and protective clothing, tested chemical agent dispersal methods, and trained Army and Navy personnel. Workers at Edgewood also tested and developed flame weapons and smoke screens.

During World War II, President Roosevelt declared that the United States would not use chemical weapons offensively but would use them defensively. The Edgewood Arsenal continued to produce chemical agents and countermeasures in case it became necessary to use them. However, the declaration was an effective deterrent, and chemical weapons were not used against U.S. military targets.

After World War II, both Aberdeen and Edgewood experienced decreased activity, with slight increases during the Korean Conflict and Vietnam War. Chemical production at Edgewood ceased, and the facility's focus shifted to research and development, especially for chemical weapon defensive measures.

Today, Aberdeen Proving Ground is an Army Installation Management Agency installation operated by the U.S. Army Garrison, Aberdeen Proving Ground (USAGAPG). There are eight major Army commands represented on APG and the installation supports 65 tenants, 20 satellites and 17 private organizations. The Army's Chemical Materials Agency, or CMA, is one of USAGAPG's major tenant activities and is responsible for the safe storage and ultimate destruction of the U.S.'s chemical agent stockpiles.

Aberdeen Proving Ground History

[1917]
October
Aberdeen Proving Ground established shortly after the United States enters World War I

[1917]
November
Edgewood Arsenal established to provide chemical production and artillery shell filling facilities

[1930s]
Edgewood Arsenal serves as the center for Chemical Warfare Service activities

Photo Credit: U.S. Army Historical Photo

[1941]

Storage of bulk mustard agent begins at Edgewood Arsenal

[1950]

Last major mustard agent production at Edgewood Arsenal

[1971]

Edgewood Arsenal merges into Aberdeen Proving Ground

Community Involvement is Key to Our Success

Visit the U.S. Army Edgewood Chemical Stockpile Outreach Office

The outreach office welcomes visitors who would like to learn more about chemical disposal at Aberdeen Proving Ground. Exhibits, fact sheets, photographs, videos and technical information are on display and available to the public. Staff can arrange for speakers to address your group or organization. Visitors also are invited to participate in information sessions and discussions where they can ask questions and provide input on the program.

Edgewood Chemical Stockpile Outreach Office

1011 B Woodbridge Center Way
Edgewood, Maryland 21040
(410) 676-6800

On the Web:

Chemical Materials Agency: ***www.cma.army.mil***

Assembled Chemical Weapons Alternatives: ***www.pmacwa.army.mil***

Chemical Weapons Convention: ***www.opcw.org***

Edgewood Chemical Stockpile Outreach Office
c/o Director of the U.S. Army Chemical Materials Agency
Public Affairs Office E5101
AMSCM-SSP5183 Blackhawk Road
APG-EA, MD 21010-5424

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